MARINE REVIEW.

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Soft Coal Situation.

Soft coal shipments to all Lake Superior ports (correct figures regarding Lake Michigan coal trade are not available) to Oct. 1 aggregated only 145,822 net tons, a decrease of 899,918 tons as compared with the same date a year ago. Shipments during September amounted to only 124,758 tons. A similar decrease would probably be shown in Lake Michigan shipments if figures were available. During the full season of 1896 there was shipped to Lake Superior 2,626,130 tons of soft coal, so that in order to reach the total of last season it will be necessary to move to Lake Superior alone 1,480,308 tons of coal during October and November. A total of 700,000 tons a month to Lake Superior would represent a very heavy movement of bituminous coal, but from the manner in which the railways, operating between mines and lake ports are straining every effort to provide for the lake trade, it would seem that the aim is to forward to the northwest nearly as much coal by lake as was moved last season. Car dumping machines, now in operation at all Lake Erie ports, may make such a movement possible. A great deal more coal than was shipped last year would be forwarded if the facilities would admit of it. The soft coal shippers are fighting at every step the efforts of vessel owners to advance rates. They are organized for the purpose of resisting, as far as possible, all advances in rates, but the situation is, of course, entirely against them. Some of them are forced to meet contracts made at low prices before the strike, and in such cases higher mining costs, higher lake freights, and advanced wages in other lines are important items. At this writing the rates on soft coal are 40 cents to Milwaukee and Green Bay, 30 and 35 cents to Escanaba, 40 cents to Portage and 30 cents to ports at the head of Lake Superior.

Hard coal shipments to Lake Superior ports aggregated 362,171 tons on Oct 1, against 297,582 tons on the same date in 1896 and 257,642 tons in 1895. This is quite an increase in Lake Superior shipments, but it is understood that Chicago and Milwaukee are not quite so well provided for. Not much in the way of support for the lake freight market can be expected, however, from hard coal shipments for the balance of the season.

The New Rockefeller Ships.

The highest practice in ship building will be represented in the three new freight vessels—a steamer and two barges—to be built by F.W.Wheeler & Co., of West Bay City for the Bessemer Steamship Co., of Cleveland. This will be the case, especially with the steamer, which will not only have quadruple expansion engines, but will also be fitted with hollow steel shaft and crank pins, oil tempered, of Bethlehem Iron Co. manufacture, and will have Fox corrugated furnaces, together with purifiers for boiler water. It is intended to have these ships embody every improvement that may be advantageously applied to the service in which they will be engaged.

Dimensions of these vessels show that the lakes are fast approaching the 500-foot mark in freight carriers. The three ships will have a capacity of full 20,000 tons on next season's draft. The steamer will be 475 feet over all, 455 feet keel, 50 feet beam and 29 feet deep. She will have quadruple expansion engines, cylinders, 28, 40, 59 and 85 inches, with 42-inch stroke. Steam will be furnished by four Scotch boilers to be allowed 200 pounds working pressure to the square inch. Her water bottom will be 6 feet deep. In the schooners the increase in dimensions is very marked. They will each be 450 feet over all, 435 feet between perpendiculars, 50 feet beam and 28½ feet depth. These dimensions represent a ship larger than any steamer now afloat on the lakes. Water bottoms will be 5½ feet deep. The schooners will have towing machines, and will each have two windlasses, one forward and one aft. The machinery, as well as capstans, etc., will be American Ship Windlass Co. make. They will have two 6,000-ton anchors forward and two 4,000 ton anchors aft. On account of their great size, these vessels will each have fourteen cargo hatches, 24-feet centers.

Reports are rife as to deals which are pending of a much more important character than the Norrie mine purchase. Great as the Carnegie-Oliver-Rockefeller interests now are, overshadowing any other group of iron interests in the country, they are evidently considerably under what their astute managers hope to eventually make them. Their power is pretty thoroughly demonstrated in the success attending their late efforts. The belief is prevalent, being founded on the observations of more than a few persons, that the tactics of the Standard Oil Co. may be repeated in the iron trade. Unlimited capital and the shrewdest management are yoked in this new development of constructive enterprise, and those who are in its way must be absorbed or crushed. If the history of the Standard Oil Co. were to be repeated in the iron trade, the consumer would have no reason to fear the result. The interests of the consumer of oil and oleaginous products have been well served by that company. But it would be better for the country to have a large number of independent producers, each supporting a community, than one or two great concerns concentrating operations at a few points and merely maintaining distributing branches elsewhere. It is to be hoped that the project of controlling the iron trade of the central west will be found too great to be accomplished, even with the colossal funds at the command of those who are undertaking it.—Iron Age.

Capt. Joseph Lampoh, who was in the steamer John M. Glidden, has been appoinetd master of the Onoko, and Capt. William S. Carloss takes the Glidden.

Deep Water Is Doing It.

The monthly report of traffic through the canals at Sault Ste Marie again directs attention to the increased capacity of lake vessels, due to deep channels and the effect of 5,000-ton ships on lake commerce. Although the number of vessel passages to Oct. 1, is 1,894 less than on the same date a year ago, and the registered tonnage about 450,000 tons less than it was a year ago, the total freight movement shows an increase of 795,742 tons. Here are the figures:

	VESSEL PASSAGES.	REGISTERED TONS.	FREIGHT TONS.
To Oct. 1, 1897.....	13,256	13,516,107	13,589,183
To Oct. 1, 1896.....	15,150	13,998,075	12,793,441

Soft coal shipments to Lake Superior ports during September amounted to only 124,758 tons; for the season to Oct. 1, they were 1,145,822, against 2,045,740 tons on the same date in 1896. Contrary to expectations, grain shipments are not equal to those of a year ago. The wheat movement aggregates 30,874,381 bushels, as compared with 42,553,060 bushels to Oct. 1, 1896. In grain other than wheat there is also a shortage—about 2,000,000 bushels—but flour shipments are about 200,000 barrels in excess of those of a year ago. A full statement of the commerce of both canals follows:

MOVEMENT OF PRINCIPAL ITEMS OF FREIGHT TO AND FROM LAKE SUPERIOR.

ITEMS.	To Oct. 1, 1897.	To Oct. 1, 1896.	To Oct. 1, 1895.
Coal, anthracite, net tons.....	362,171	297,582	257,642
Coal, bituminous, net tons.....	1,145,822	2,045,740	1,471,102
Iron ore, net tons.....	8,589,702	6,811,765	6,574,495
Wheat, bushels.....	30,874,381	42,553,060	17,432,374
Flour, barrels.....	5,766,039	5,578,862	5,876,395

The total movement of all kinds of freight, shown below, to and from Lake Superior to October 1, 1897, is 13,589,183 tons. This is nearly eight hundred thousand tons greater than to October 1, 1896, and over two and a half million tons greater than on the same date in 1895.

REPORT OF FREIGHT AND PASSENGER TRAFFIC TO AND FROM LAKE SUPERIOR, FROM OPENING OF NAVIGATION TO OCT. 1 OF EACH YEAR FOR THREE YEARS PAST.

EAST BOUND.

ITEMS.	Designation.	To Oct. 1, 1897.	To Oct. 1, 1896.	To Oct. 1, 1895.
Copper	Net tons....	93,098	93,271	81,581
Grain, other than wheat	Bushels.....	14,369,367	16,211,057	69,859
Building stone	Net tons...	4,641	16,439	20,917
Flour	Barrels.....	5,765,789	5,578,725	5,874,245
Iron Ore.....	Net tons...	8,589,702	6,811,765	6,574,495
Iron, pig.....	Net tons...	6,687	18,866	17,978
Lumber	M. ft. b. m.	580,043	537,571	607,108
Silver ore.....	Net tons...	5	240	100
Wheat	Bushels.....	30,874,381	42,553,060	17,432,374
Unclassified freight	Net tons...	180,659	141,789	110,331
Passengers.....	Number....	17,711	17,665	14,473

WEST BOUND.

Coal, anthracite.....	Net tons...	362,171	297,582	257,642
Coal, bituminous.....	Net tons ..	1,145,822	2,045,740	1,471,102
Flour	Barrels	250	137	2,150
Grain	Bushels.....	... .	2,209	35,650
Manufactured iron.....	Net tons...	84,167	67,256	55,547
Salt	Barrels	172,509	171,838	177,868
Unclassified freight.....	Net tons...	256,751	233,418	204,613
Passengers.....	Number ...	19,843	18,095	15,149

SUMMARY OF TOTAL FREIGHT MOVEMENT IN TONS.

	To Oct. 1, 1897.	To Oct. 1, 1896.	To Oct. 1, 1895.
West bound freight of all kinds, net tons	1,883,801	2,676,101	2,042,060
East bound freight of all kinds, net tons	11,705,382	10,117,340	8,948,766
	13,589,183	12,793,441	10,990,826

The total number of vessel passages to Oct. 1, 1897, was 13,256 and the registered tonnage 13,516,107.

Dry Docks of the World.

The report of the board of experts appointed to inquire into the docking requirements of the navy has been published in full. It is an interesting collection of information on the subject of dry docks. The board recommended that ten new docks be constructed at a cost of $11,075,000. In support of this recommendation it is stated that of the total 622 dry docks in the world, about 348 are owned by Great Britain, and of these 266 are situated in England, Ireland, and Scotland. So essential does that country consider the dry docks to her commercial and naval supremacy that she possesses as many as ten in Australia, fifteen in China, thirty in India and the East Indies, and in Canada and British Columbia there are twelve. At the great naval station at Portsmouth there are nine dry docks with 33½ or 41½ feet of water on the sills, and the other great dock yards are all liberally supplied.

The report states that while an outlay of $11,075,000 is recommended, there is no urgent necessity for constructing more than five of the docks at present. It is suggested that the amount—$5,750,000—needed for these should be voted in annual installments, as is now done in the construction of the new battleships and cruisers. The list of the proposed docks is as follows: At Boston, one concrete dock 700 feet long, $1,500,000; at New York, one concrete dock 500 feet long, $1,200,000; at Norfolk, one concrete dock 500 feet long, $1,100,000; at Port Royal, improvements, $25,000; at New Orleans, floating graving dock, $750,000; at Mare Island, one concrete dock, 500 feet long, $1,100,000; total $5,675,000. In addition to the docks urgently needed, the board recommends that structures be built at these places: At New London, fresh water basin, with dock, $1,000,000; at Newport News, a steel floating graving dock, $650,000; at Tortugas, a steel graving dock,$650,000; at San Francisco, concrete dock at Yerba Buena, $1,500,000; at San Pedro, concrete dock 700 feet in length, $1,500,000. The report also states that ultimately dry docks should be constructed at Pensacola, Florida, and Galveston, Texas.

It will be noticed that the materials of which our existing dry docks have been built, viz., stone and wood, is not recommended for the new structures, steel, and concrete taking their place. As regards concrete, it may be said that if the work is well carried out a dry dock of this material has all the advantages of solidity and permanence offered by one of granite without the drawback of excessive cost. The difference in cost is great; the proposed concrete dock at Mare Island is to cost but $1,100,000 against the reputed cost of $4,000,000 for the present stone dock. Moreover, a concrete dock can be built in considerably less time. There will be objections raised against the complete abandonment of the timber construction by those who have faith in this system. But while it is true that there are timber docks that have been giving good service for from thirty to forty years, there have been failures, or partial failures, like that at the Brooklyn navy yard, which render the system hazardous in a work of such pressing necessity as the speedy provision of docks for a nation's navy. An even greater innovation would be the construction of steel floating and graving docks, as proposed. These docks would compare favorably in cost with the discarded timber docks, the estimate of $650,000 being about equal to the cost of the Brooklyn dry dock No. 3, and probably less than the latter structure will have cost by the time it is put in serviceable shape. It also has the advantage of being movable, at least within sheltered waters.

All charts sold by the Marine Review are corrected to date of sale.

Combinations in the Iron Trade.

Daily newspaper dispatches of late have had a great deal to say of another pool among steel rail makers and the proposed wire rod and wire combination. The Iron Age in its latest issue says of these dispatches:

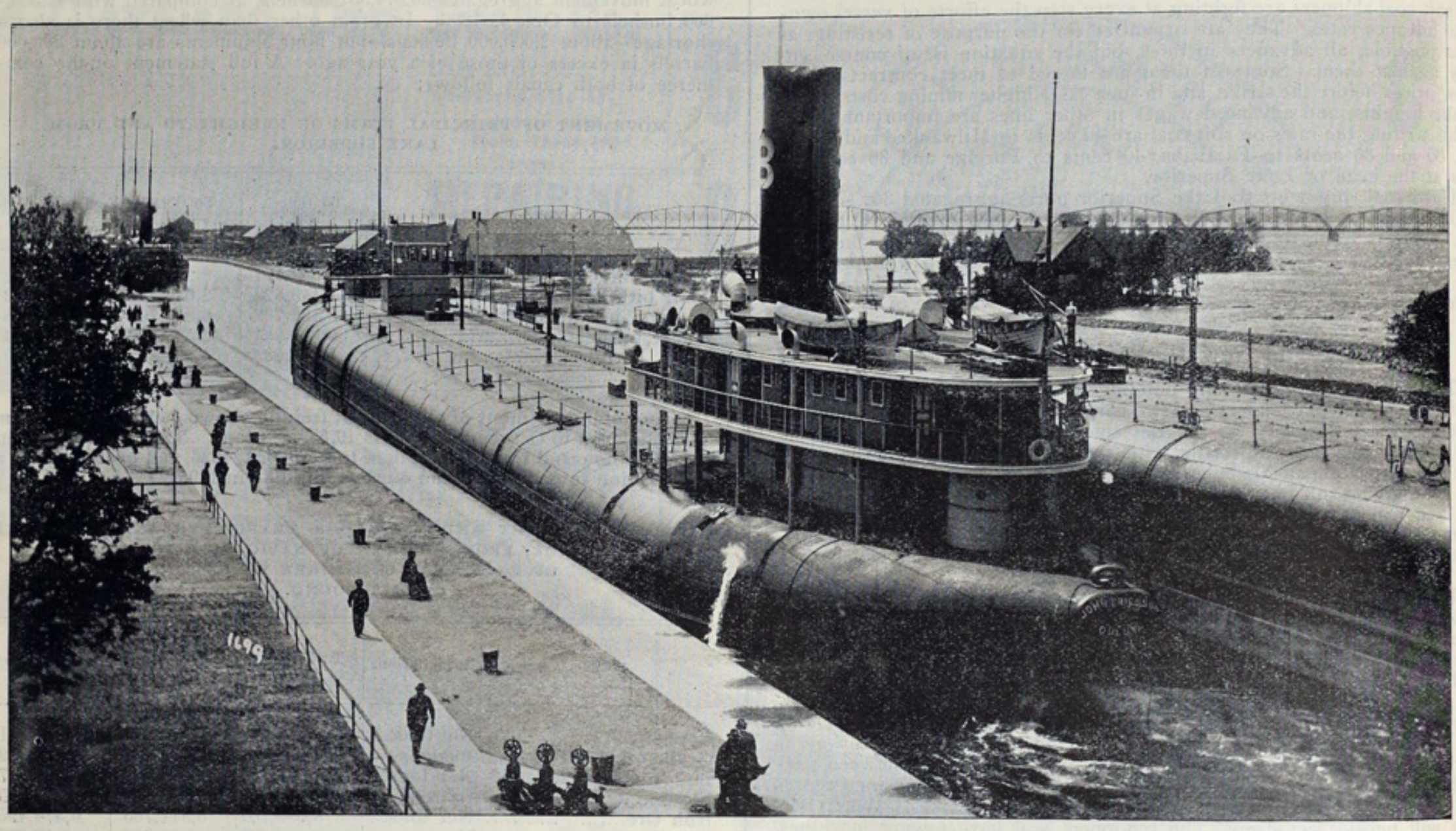
"The talk of a pool among the steel rail makers is premature and inaccurate. It is possible that the three leading mills may conclude to work in harmony. This is far from the old plan of subsidizing every steel plant which has a little finishing machinery and might possibly turn out a few rails. Since even long established makers would not work with the three producers referred to, the scheme is evidently far removed from anything like a pool, and could not, in the nature of the industry, repeat former errors of raising prices unduly. As regards the proposed wire rod and wire consolidation, it may be said that the cup is not anywhere near the lip yet. There are many chances for a slip. The status of the negotiations is such that a considerable time may elapse beore the very ambitious and comprehensive scheme even approaches consummation. Options on a number of large plants are being secured for one of the greatest banking houses in this country. In some cases the options cover not alone the wire departments, but also furnaces and steel plant. In another instance one works of a large group must be divorced from the others, unless legal difficulties prevent it. If the plans are successful the wire trade will undergo revolutionary changes."

Halifax Graving Dock.

Some of the misstatements published in connection with the docking of the U. S. S. Indiana at Halifax undoubtedly originated with certain owners of private docks in New York, and were very probably circulated for the purpose of injuring the business of the Halifax Graving Dock Co. In a letter to a friend in Cleveland, who was determined to run down the misstatements made about the docking of the Indiana, Mr. D. McPherson, manager of the Halifax company, says:

"The Halifax graving dock was excavated out of the solid rock. The bottom was leveled with concrete. The keel blocks are of the best white oak, 20 inches wide, and rest on granite blocks bedded in concrete and are 5 feet from center to center. The bottom of the dock is floored over with 5-inch pitch pine plank, laid on pitch pine stringers, which are bedded in concrete. H. M. S. Blake, 9,000 tons, docked here 5 times, and sat on fifty-two of these blocks, which would give each block a weight to bear of 173 tons, and she neither damaged her plates or the blocks. In the case of the Indiana we placed an extra block between each of the permanent ones, which left a space of 10 inches between the blocks. We did this because the Indiana's frames were so far apart, not that we had any fear of her crushing the permanent blocks if left in the usual way. The keel blocks did not settle; neither were any of the Indiana's plates indented 1½ inches as stated in some newspapers, or even half an inch. I will guarantee to dock any ship, large or small, with or without bilge keels, that is strong enough to bear her own weight, without any damage or even a scratch of paint"

The Halifax dock is 600 feet long and 102 feet wide at coping, and there is 29 feet of water on the sill.



Whaleback Steamer John Ericsson in the St. Mary's Falls Canal.

Queen of the Seas.

This title has already been earned by the new North German Lloyd steamer Kaiser Wilhelm der Grosse. From noon to noon on successive days, during her first voyage from Southampton to New York, she made 531, 495, 512, 554, and 564 nautical miles, the latter being the longest distance travelled by any ship in one day. Allowing for the lengthened day owing to the ship chasing the sun, this day's run is well over 22½ knots. Her average speed for the voyage was 21.39 knots. On the Queenstown and New York run the Cunard liners Campania and Lucania have made better average speeds, the highest being a fraction over 22 knots, but it is, of course, more than probable, in view of the initial performance of the German steamer, that she will, in the next voyage or two, exceed the average speed of the Cunarders. On her first eastward voyage, New York to Plymouth, the Kaiser Wilhelm again lowered a record, her time being 5 days, 15 hours and 10 minutes, and her average speed 21.90 knots. The illustration appearing on this page is from a photograph made for Engineering of London.

Paid for Herself Three Times Over.

When informed of the loss of the steamer E. B. Hale, which foundered on Lake Huron, a few days ago, with a cargo of steel billets, M. A. Bradley, her owner, simply remarked that he was pleased to learn that the crew had been saved. "There is no longer a place for vessels like the Hale," he said, "or in fact for many of the steeel vessels. The old line of vessel owners may as well face the inevitable. Only the ships built within the past year or two can survive under the operations of immense capital that is now being applied to lake commerce. The Hale cost $101,000 when she was built in 1873, and since that time her earnings, divided among owners, has amounted to $325,000, so that there is no complaint to be made on her account."

But not all of the old line of vessel owners can view the loss of a vessel on which there was no insurance in the matter-of-fact manner in which Mr. Bradley took the loss of the Hale. He can afford to discuss a loss of this kind without making a fuss over it. The earnings of Bradley ships have for several years been invested in other lines. The vessels are not now an important part of the accumulations of the family, and Mr. M. A. Bradley is probably congratulating himself on this account. Four or five years ago when the iron mining corporations began to build vessels on a large scale, and when it was quite evident that John D. Rockefeller would soon own ships, Mr. Bradley said that the volume of capital coming into the business was too big for him. He made no further investments in vessel property.

It is only a few years since the Hale was regarded as one of the best towing steamers on the lakes. She was not a very old vessel, but steel billets or pig iron make a bad load for any ship. Her master, James Lawless, is a veteran. He has followed the lakes for more than 40 years.

The Review has excellent photographs of lake ships.

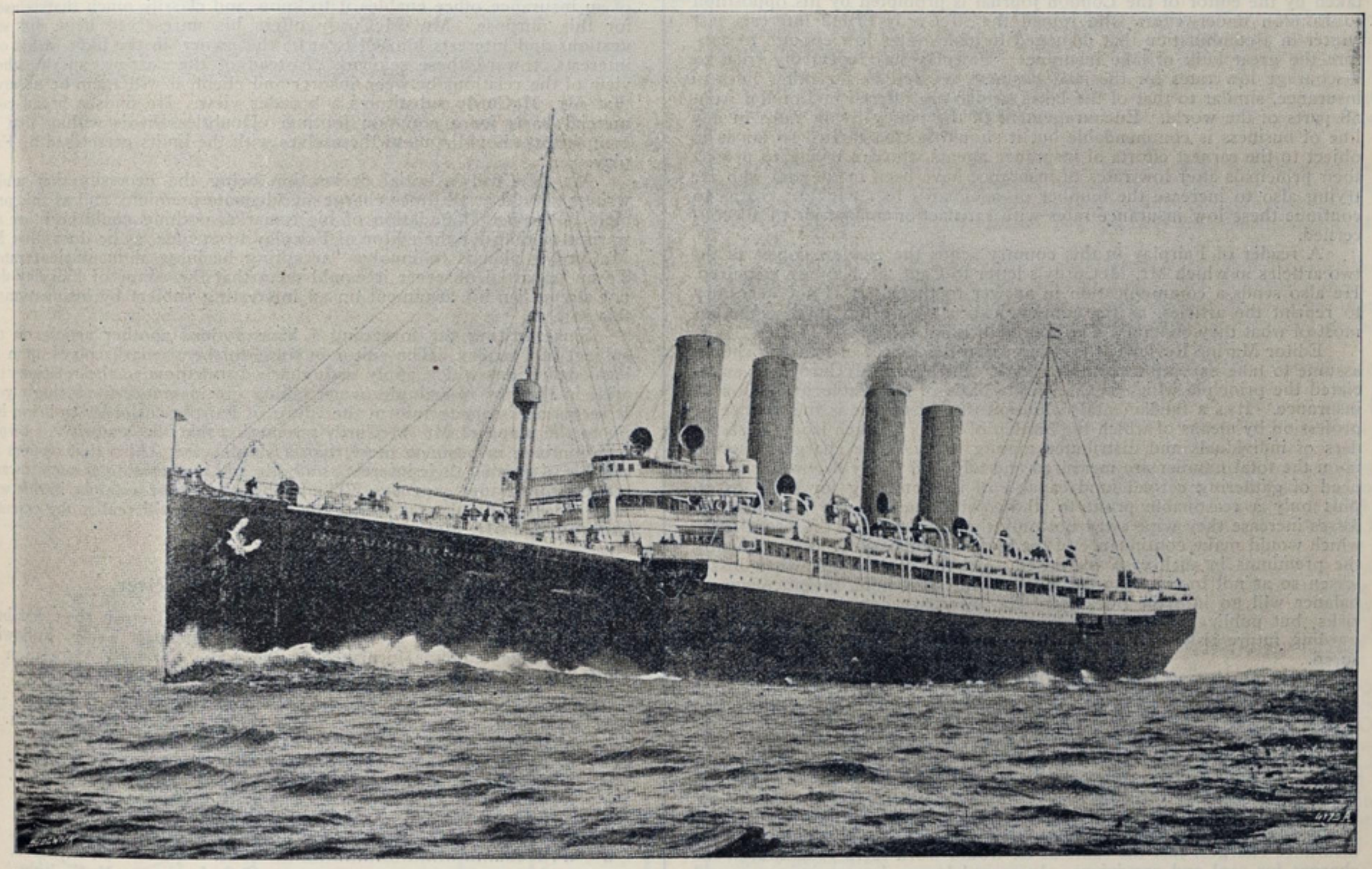
The Sovereign and her Subjects.

Gen. Hyde, Mr. W. I. Babcock and others who have written of the Congress of Naval Architects and Marine Engineers, held recently in England, were all impressed with the homage paid to Queen Victoria. American delegates to the congress were unable to find words descriptive of the delight of the English ship builders when it was announced at the Imperial Institute in London that the delegates to the congress, together with members of the Institution of Naval Architects and their wives, would be accorded special reception at Windsor. This is how Charles H. Cramps puts it:

"It is not possible for any American, however well informed of British affairs, to quite understand the feelings with which this human being is now regarded. If he can imagine 'Old Glory' and old Ironsides, Washington and Lincoln, Bunker Hill, and 'My Country, Tis of Thee,' rolled into one force, and personified in a woman, he may form some conception of the feelings of the average Briton for 'The Queen,' for she in her own person symbolizes to-day the might and majesty of the land, and its long, varied, and glorious history from the beginning. 'The Queen' means everything that touches and thrills the patriotic chord."

Writing of the naval display at Spithead in the North American Review, Mr. Cramp says:

"Even the imagined alliance of France, Germany, and Russia would be unable to cope with her upon that element. Indeed, the combined fleets of Europe would probably be destroyed by the united, compact, energetic fleet of Britain, especially since we take into account the capacity of Britain to replace the losses of war. The numerous ships of war already on the sea, and the enormous number now building give the world due notice that Britania means to continue ruling the waves. Americans may be apt to consider that this involves a great strain upon her resources, but the fact remains that her revenues swell year after year, and that although she is spending $500,000,000 per annum, she has a surplus of revenue this year of $25,000,000. Her wealth is amazing. Crowded into this little island, not as large as one of several of our states, there is something approaching the entire wealth of our forty-five states. Public sentiment applaudes, indeed forces successive governments to increase the navy, because it is now universally recognized that the control of the sea is essential to the existence of the nation which cannot feed itself, but is compelled to draw one-half of all it consumes from foreign lands. Ships bringing food to Britain destroyed or even delayed would be equivalent to the capture of the country; for her starving people would compel acceptance of any terms the conqueror might see fit to impose. Whether Conservative or Liberal party be in power, we may conclude that the navy of Britain will be kept equal to meet any possible combination of European powers against her."



Kaiser Wilhelm der Grosse—Queen of the Seas.

FIRST PICTURE OF THE SHIP FROM A PHOTOGRAPH—(FROM ENGINEERING, LONDON.)

The Vessel, Not The Underwriter, Pays the Loss.

An article with the above heading which appeared in the Review of Sept. 2, has attracted considerable attention in marine insurance circles of London, England. The article contained extracts from a letter written by Geo. L. McCurdy of Chicago to Capt George P. McKay of the Lake Carriers' Association. Mr. McCurdy explained to Capt. McKay the methods of the insurance interests which he represents in cooperating with the Lake Carriers to reduce losses by taking means to prevent accidents, especially those resulting from steel vessels stranding in shallow places, which may be said to be peculiar to the lakes. Mr. McCurdy was desirous of impressing vessel owners with the fact that in all precautions against accident their interests were being served, as in the end the cost of insurance would be reduced on account of systematic effort to reduce losses. In emphasizing this point he said: "We must start with the idea firmly fixed in our minds that the underwriters are simply the custodians of a fund created by the ship owners, who pay the companies premiums from which alone may be expected the necessary funds with which to pay for disasters."

It is well known, of course, that on the lakes this view of the subject of insurance is accepted by vessel owners, who will act with the underwriters or anybody else engaged in an effort to reduce losses. But strange to say, one of the London shipping journals—and a very good one too—takes exception to the statement that "the vessels, not the underwriter, pays the loss." Mr. McCurdy's letter to Capt. McKay has been the subject of a great deal of adverse criticism in Fairplay of London. It would seem, however, with the matter sifted down, that the position taken by the editor of the London journal is prompted by his opposition to London underwriters who joined the McCurdy-Prime interests last winter in a combination that managed to make rates low enough to capture the great bulk of lake insurance. Fairplay has repeatedly tried to discourage low rates for the lake business, as well as for other lines of insurance, similar to that of the lakes, which are offered in London from all parts of the world. Encouragement of the policy living rates in any line of business is commendable but it should not be carried so far as to object to the earnest efforts of insurance agents who are trying to protect their principals after low rates of insurance have been made, and who are trying also to increase the number of safeguards to navigation, so as to continue these low insurance rates with satisfaction and profit to all concerned.

A reader of Fairplay in this country sends the Review copies of the two articles in which Mr. McCurdy's letter to Capt. McKay are criticized. He also sends a communication in answer to them. It is not necessary to reprint the articles, as the communication answering them embodies most of what they contain. The communication follows:

Editor Marine Review: It is strange that the Editor of Fairplay should assume to take exception to the terms in which Mr. McCurdy has enunciated the principle which is the simple basis of the whole profession of insurance. It is a fundamental definition that insurance is the science or profession by means of which the burden of losses is taken from the shoulders of individuals and distributed among many. The charges assessed upon the total number are measured and adjusted solely according to the need of gathering a total fund capable of indemnifying for such losses, plus only a reasonable profit to those who operate the business. If losses increase they wipe away not only the loss fund but the profit fund, which would make continuance of the business impossible. Consequently the premiums in such case are raised. On the other hand, when losses lessen so as not to consume the whole of the loss fund, the unconsumed balance will go into the pockets of the insurance company on the past risks, but public knowledge and competition will play such a part regarding future risks as to force a reduction in the rate of premium insured.

Every one knows that this is a true description of insurance. It does not need a skilled professional education to see it. Mr. McCurdy, therefore, was teaching only a rudimentary truth when pointing out in his letter published in the Marine Review that the prevention of careless navigation and unnecessary loss to underwriters is a matter of direct concern to the ship owner. Whoever denies this must be prepared to defend the proposition that the ship owner has no cause to feel any desire for the retrenchment of his insurance expenses. Of course it is to the interest of the ship-owner to work for any object that will bring reduction of his insurance charges, just the same as he would work for a reduction of his charges for coal and provisions. Increased losses, by causing an appeal to the first law of existence of the insurance company cause increased premiums, and these come out of the pockets of the ship-owner. Reduced losses by increasing the insurance profits calls in increased competition, which causes reduced premiums, and the savings herein stay in the pockets of the ship-owners. Therefore, increased losses are at the cost of the ship-owner and reduced losses are his gain, provided a sufficient series of years is taken to permit the principle to work itself out.

Mr. McCurdy asked the ship-owner not to allow this home trust to be obscured by the circumstance of the intervention of the insurance company. He pointed out that in the long run the insurer gets but a moderate profit for his work. It consists of the differences he gets a chance to retain between the great masses of funds flowing into his hands from the owners as premiums, and flowing back again to the owners as losses. This was an argument teaching the owners from the standpoint of enlightened self-interest not to be indifferent to any opportunity to train their masters to careful navigation and avoidance of loss. There is not the slightest reason to doubt that the owners who read Mr. McCurdy's article understood and appreciated his meaning.

The editor of Fairplay here sounds a flourish and points out with a superior air that Mr. Mcurdy has used a word in his description which is legally an inaccuracy. It is surprising, thinks this editor, that Mr. McCurdy should allude to the insurer as but a "custodian" of funds for the shipowners. Of course only "clubs" are that. Underwriters of companies are custodians only for their stockholders. Witness the fact he says, that when winding up annual accounts they keep their profit or stand their loss on the year's operations without dividing either with the shipowner.

True, but who are the stockholders, in the long run custodians for? The accumulations of companies are publicly held out to assure their policy holders all the more infallibly that the great laws of inflow and out flow which have been described shall ever go on evenly, free from danger of diversion at expense of the policy holder, to make good any specific errors in management. Therefore, McCurdy's term though technically untrue was in the large view wholly true, for it carried an important and sound generalization. What value is there in anyone's interrupting Mr. McCurdy here and pointing out that at the end of any year's operations the insurance company keeps its profits or swallows its loss, without, for the time being, dividing either with the policy holder? Does the editor of Fairplay suppose that either Mr. McCurdy or the ship-owners whom he was addressing did not know that? Does he suppose that Mr. McCurdy was missing the specific legal facts when surveying the large workings of a natural law? He should rise to Mr. McCurdy's meaning. His assumed correction of Mr. McCurdy's terminology is insignificant and unserviceable.

The editor of Fairplay deprecates Mr. McCurdy's concerning himself with causes of loss and their remedies, and recommends that the underwriter confine his attention to his premium account and let owners find out for themselves, on the spur, if need be, of increased insurance expense, the necessity as well as the ways and means of reducing losses. This is good theory. Apply it strictly and you have a cold business; like relation between assurer and assured; party of the first part—party of the second part. Of course the theory lies at the foundation and should not be dispensed with. Mr. McCurdy is willing to engraft upon it a friendlier relation with his clients. Assuming that the owner wishes to save, Mr. McCurdy is willing to help him to know how. The machinery of an insurance office enables it to know and classify much that is useful for this purpose. Mr. McCurdy offers his unreserved help and suggestions and interests himself to urge the owner, in the light of his own interests, toward these reforms. Instead of the narrow, unsympathetic view of the relations between insurer and client, it will again be observed that Mr. McCurdy substitutes a broader view. He finds a broad commercial basis for a common footing. Doubtless he is willing that his competitors should content themselves with the limits prescribed by Fairplay.

Mr. McCurdy's initial declaration being the necessity that underwriters should at all times charge an adequate premium, and as this principle is the very foundation of his remarks, nothing could be more unwarranted than for the editor of Fairplay to assume, as he does, that Mr. McCurdy's plan is to involve "accepting business at insufficient rates." To an impartial observer it would seem that the editor of Fairplay does not strengthen his argument on an interesting subject by insinuations of this sort.

Since writing the foregoing I have noticed another article on this subject in Fairplay. The editor in these further remarks plays upon the legal definitions which apply with sharp distinctness to the relations that arise in the case of a single owner taking out insurance for a single year. It seems necessary to inform the editor of Fairplay in order to bring him on to the plane of Mr. McCurdy's remarks, that the majority of owners will continue in business more than a single year. Also that owners are capable of sensing their interest as a body and cooperating as such towards reducing insurance expenses. The further the editor extends, in this way, the borders of his mental vision, the more he too will realize the essential truth of what Mr. McCurdy has laid down.

Draft of Water in Detroit River.

Draft of water in the vicinity of Ballard's reef, Detroit river, has been below the 17-foot mark several times during the past week. Following are the gauge readings furnished to the Lake Carriers' Association by Duff & Gatfield:

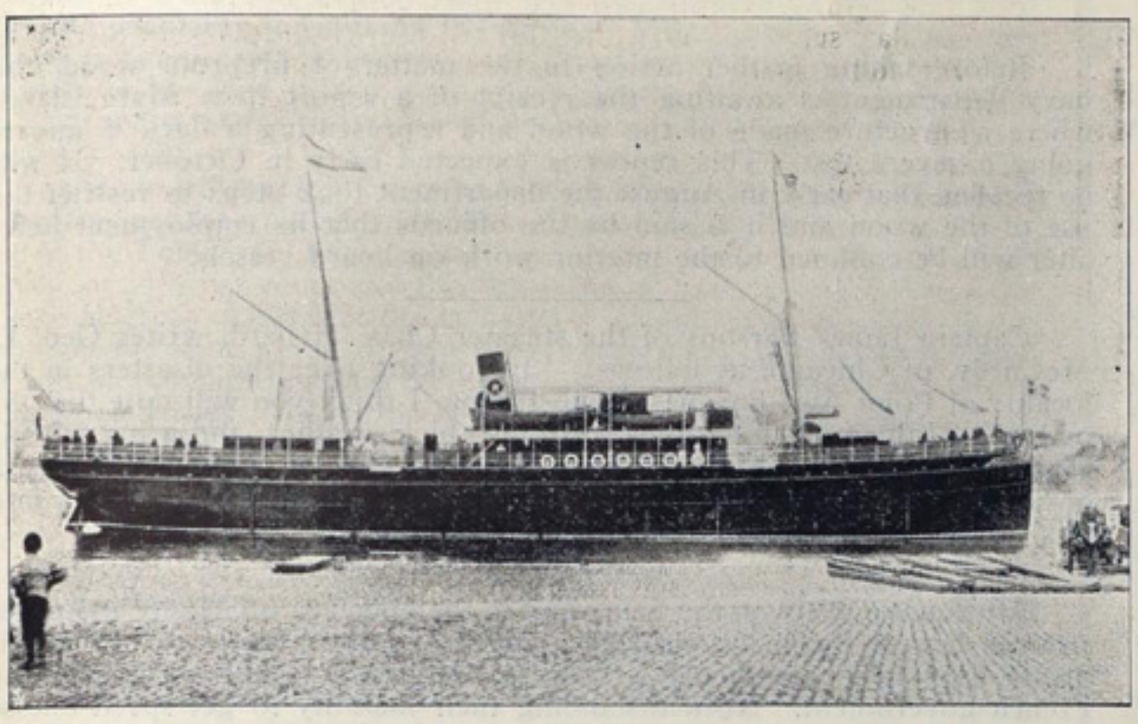
DATE.	DRAFT.	WIND.
Oct. 5, 6 p. m	17 ft. 5 in.	N. W., fresh.
" " midnight	17 ft. 4 in.	N., fresh.
Oct. 6, 6 a. m	17 ft. 5 in.	N. W., light.
" " noon	17 ft. 3 in.	N. W., fresh.
" " 6 p. m	17 ft. 6½ in.	W., fresh.
" " midnight	17 ft. 6 in.	W., fresh.
Oct. 7, 6 a. m	16 ft. 9 in.	N. W., fresh.
" " noon	18 ft.	N. E., fresh.
" " 6 p. m	17 ft. 5 in.	N. E., light.
" " midnight	17 ft. 7 in.	E., light.
Oct. 8, 6 a. m	17 ft. 11 in.	S. W., fresh.
" " noon	16 ft. 11 in.	S. W., fresh.
" " 6 p. m	17 ft. 9 in.	S. W., light.
" " midnight	17 ft. in.	N. W., light.
Oct. 9, 6 a. m	17 ft. 7 in.	N. E., light.
" " noon	17 ft. 7 in.	N., moderate.
" " 6 p. m	17 ft. 4 in.	N. E., light.
" " midnight	17 ft. 10 in.	E., light.
Oct. 10, 6 a. m	17 ft. 8 in.	N. E., light.
" " noon	17 ft. 9 in.	S. E., fresh.
" " 6 p. m	17 ft. 10 in.	E., light.
" " midnight	17 ft. 7 in.	S., light.
Oct. 11, 6 a. m	17 ft. 5 in.	S. W., fresh.
" " noon	17 ft. 6 in.	S., fresh.
" " 6 p. m	17 ft. 6 in.	S., fresh.
" " midnidht	17 ft. 3 in.	S., fresh.
Oct. 12, 6 a. m	17 ft. 1 in.	W., light.
" " noon	16 ft. 9 in.	W., strong.

Dr. Nelson P. Hulst of Milwaukee, well-known as superintendent of the Pewabic iron mine at Iron Mountain, Mich., has been appointed general superintendent of the Carnegie-Oliver mines, including those on the Mesabi and Gogebic ranges, as well as the Pewabic.

Capt. F. A. Baily has taken command of the whaleback steamer Thomas Wilson, and has been succeeded in the steamer Schuck of the Gilchrist fleet, by Capt Butts, formerly of the steamer V. Swain.

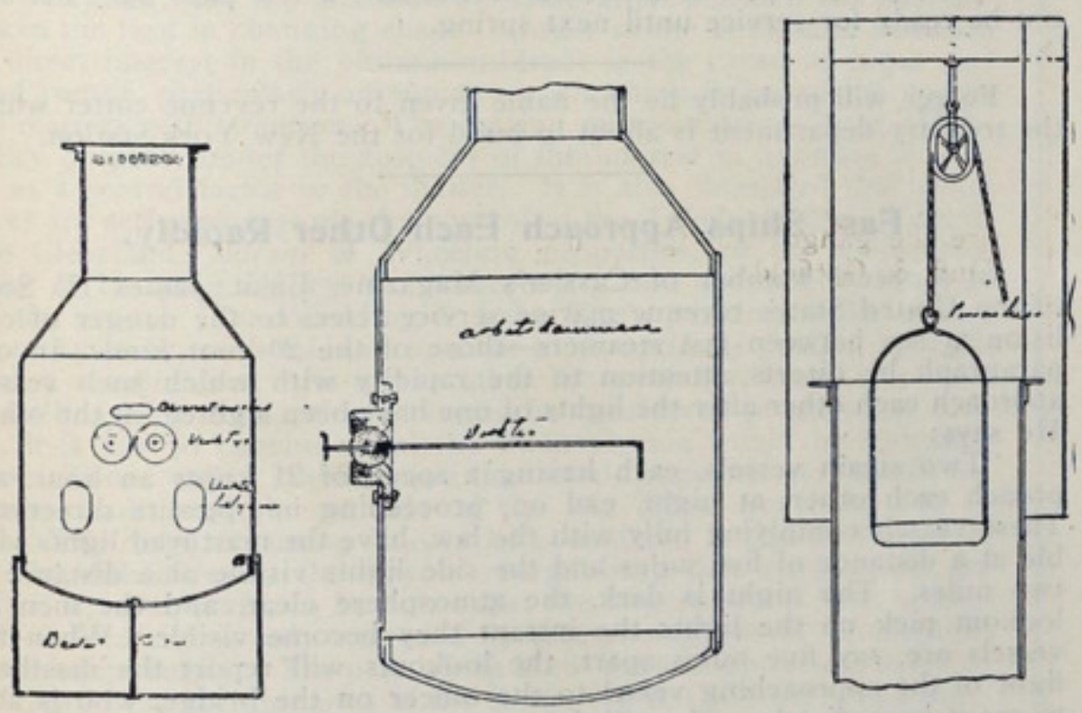
Raised from a Depth of 186 Feet.

Operations during the past summer on the wreck of the steamer Pewabic, sunk in Lake Huron, together with Capt. James Read's efforts to raise the steel steamer, Cayuga, from a depth of 100 feet in the Straits, have directed attention to deep-sea wrecking operations in other parts of the world. Mr. Carl L. Holmer, naval architect with the Cleveland Ship Building Co., has prepared for the Review from a pamphlet recently received from Sweden, the following interesting account of methods adopted in that country in raising a small steel steamer from a depth of 186 feet.



On Sept. 24, 1895, the steamer Sodra Sverige, carrying passengers and a general cargo, left Stockholm for southern ports on the east coast of Sweden, and in the evening, owing to an error of judgment on the part of the captain, she struck a rock, and sliding off into deep water, shortly afterwards sank, the crew and passengers being saved. By means of magnetic and other appliances the wreck was located, the depth of water being 186 feet. It was at first thought impossible to raise a ship from such a depth, and not until the summer of 1896 was it decided to make the attempt. The steamer was of steel, 165 feet long on the water line, with a beam of 24 feet 4 inches and 13 feet depth of hold.

It had been ascertained that the vessel was resting upright, and this made subsequent operations possible. A Mr. Waller suggested the idea of a tube, wherein a man might be lowered down alongside the wreck so as to enable him to insert the hook or crossbar at the end of a chain cable, suspended from a pontoon, into the sidelights, which extended almost all around the ship. The inventor proved the practibility of his scheme, first on a small scale and subsequently, by going down to the wreck and picking off a life buoy. A company was formed, and active



operations commenced in October, 1896, a couple of months being considered sufficient time for the undertaking. Pontoons were constructed, of ample capacity not only to sustain the weight of the ship but to overcome the adhesion of the clay, in which she was somewhat embedded. The tube was made 197 feet long and 2 feet diameter, having at the lower end a chamber 6 feet 6 inches high and 4 feet 3 inches diameter, with a double bottom for the stowing of iron ballast. The plates were elevensixteenths inch thick. Through the side of the chamber projected two steel rods, fitted in water-tight ball joints and capable of being moved in any direction as well as pushed in any direction as well as pushed out or drawn in. Above the rods was a glass covered space for looking out, which may for convenience be called a lens, and below were two larger lenses, through which the light from electric lamps was thrown on the wreck. A pipe for the supply of fresh air was fitted, but it was hardly ever needed, a man being able to work in the chamber three to four hours without inconvenience.

The tube was ballasted until floating upright and was easily moved into the place where it was wanted. By means of a simple block and tackle the operator was lowered, and from the chamber he could freely converse with those on the pontoons. Having had a chain cable lowered alongside of him, he would, by manipulating the rods, insert the crossbar into a sidelight, and thus gradually attach the pontoons to the wreck. It was an undertaking requiring much time and patience; the place was an exposed one, and storms repeatedly endangered the operations, breaking the chains, sinking the pontoons and causing other damage and delay.

Eventually all the pontoons were attached and the lifting began; first by immersing and pumping out the pontoons and afterwards by means of jacks. When the ship had been lifted well clear of the bottom, the assembly of pontoons, with the wreck hanging some 160 feet below, was towed quite a distance into shallow water, a marine procession probably without a parallel. Considerable progress having been made, it was decided to push on through the winter and spring, in spite of the storms, cold and ice. In May, 1897, the deck was brought to the surface, and divers were employed carrying chains under the ship in the usual manner. At the end of May the ship was floating unassisted, and with her delivery into Stockholm ,one of the most remarkable undertakings of modern times was brought to a successful finish.

Around the Lakes.

The Canadian government has ordered the wreck of the steamer Cottrell removed from Bar point, Lake Erie.

Capt. John Kane, a vessel master well known at Lake Michigan ports, died at his home in Sheboygan, Wis., on the 8th inst.

An interesting series of articles on "Prominent Men of the Great Lakes" (Canadian), by John A. Copeland, is now appearing in the Toronto Globe.

Directors of the Richelieu & Ontario Navigation Co., operating St. Lawrence river passenger steamers, declared a semi-annual dividend of 3 per cent., at a meeting held in Montreal on the 12th inst.

C. A. Baker of Chicago has sold the steamer Mary McLane to the Traverse City Lumber Co. for $5,000; Wm. P. Robinson has purchased the steamer M. Weston from N. L. Barker of Kenosha, Wis., for $1,500.

Fred A. Ballin, for many years superintendent of the Detroit Boat Works, has resigned to accept the position of superintendent with Wolff & Zwicker of Portland, Ore., who have of late been engaged on some work for the navy.

Tonnage of the new Davidson steamer Bermuda is 1,312.40 gross and 1,079.05 net. Capt. Davidson is putting down the keel for a schooner, in addition to the two wooden steamers which he has under way. The schooner will be 315 feet over all, 300 feet between perpendiculars, 44 feet beam and 26 feet depth.

General Manager McVittie of the Detroit Dry Dock Co. successfully withstood an operation a few days ago for relief from an ailment that has kept him from his business the greater part of the past six months. He is improving and has every prospect of eventually regaining his health and vigor.—Free Press.

A dispatch from Washington says that Major T. W. Symons, United States engineer of Buffalo, is being considered as a successor on the Nicaragua canal commission, to Capt. O. M. Carter, who was removed from the commission on account of serious charges now pending against him in the war department.

Capt. William E. Comer, who is in command of the passenger steamer State of Michigan, now running on the west shore route between Toledo and Lake Huron ports, has been in command of vessels since 1866 and has been sailing since 1852. New owners of the State of Michigan have adopted the name People's Line.

The contract for the new Cleveland & Buffalo line passenger steamer has been signed with the Detroit Dry Dock Co., notwithstanding the differences that arose regarding the new organization that is to operate the Toledo line. Arrangements for the new organization are not fully completed, but the plans are practically as announced in the Review two weeks ago.

The announcement that Lieut. Comdr. Duncan Kennedy is to succeed Commander Folger in charge of the eleventh light-house district has no connection with the efforts of certain politicians in Michigan to have Commander Folger removed from the Detroit District. Commander Folger will undoubtedly be made a captain Feb. 13, and will go to sea. If Lieut. Comdr. Kennedy, who was executive officer of the New York and is a capable official, is to come to the lakes at once, the object is undoubtedly to have him become acquainted with the duties of the eleventh district, which is the most important on the lakes, in advance of Commander Folger's promotion.

Of a list of about sixty merchant ships that could readily be fitted to mount guns in event of an emergency, several are from the lakes. Draftsmen and other employees in the navy department put in a great deal of spare time in preparing and filing away for future use plans for alterations in these vessels that would make them serviceable. At present the navy has either completed or in course of manufacture 130 modern rapid-fire rifles of four and six-inch caliber, with carriages complete, to be housed in navy yards ready for immediate installation on shipboard on short notice. Constructor Hichborn is drawing plans of every vessel certified as available as an auxiliary cruiser, and he says on thirty days' notice he can convert these ships into well armed and well protected cruisers. Capt. O'Neil of the ordnance bureau says that the guns now available would be sufficient to arm possibly fifteen of the auxiliaries. At the present rate of appropriations it will take several years to secure a supply of guns sufficient for the list of available ships of the merchant service now in hand, but the work could, of course, be hurried if there was any immediate fear of difficulty.

What are Rockefeller's plans about the building of more ships! This question has been asked many times in marine circles of late. The people who can answer it, Mr. Gates or Mr. Bowers, who are Mr. Rockefeller's managers, refuse to talk on the subject. This is not surprising, but they even refuse to say anything about whether present negotiations with ship builders will result in any contracts other than those just announced, being let for the coming winter. People who are best able to judge, are of the opinion that they are done for the present. But an opportunity a little later to contract for two or three vessels at low prices, on which delivery would not be required until late next year, will very probably be taken up.

MARINE REVIEW

DEVOTED TO LAKE MARINE AND KINDRED INTERESTS.

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The books of the United States treasury department on June 30, 1896, contained the names of 3,333 vessels, of 1,324,067.58 gross tons register in the lake trade. The number of steam vessels of 1.000 gross tons, and over that amount, on the lakes on June 30, 1896, was 383 and their aggregate gross tonnage 711,034.28; the number of vessels of this class owned in all other parts of the country on the same date was 315 and their tonnage 685,204.55, so that more than half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1896, was as follows:

	Number.	Gross Tonnage.
Steam vessels	1,792	924,630.51
Sailing vessels and barges	1,125	354,327.60
Canal boats	416	45,109.47
Total	3,333	1,324,067.58

The gross registered tonnage of the vessels built on the lakes during the past six years, according to the reports of the United States commissioner of navigation, is as follows:

Year ending June 30. 1891	204	111,856 45
" " " 1892	169	45,968.98
" " " 1893	175	99,271.24
" " " 1894	106	41,984.61
" " " 1895	93	36,352.70
" " " 1896	117	108,782.38
Total	864	444,216.36

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC. (*From Official Reports of Canal Officers.*)

	St. Mary's Falls Canals.			Suez Canal.		
	1896*	1895*	1894	1896	1895	1894
Number of vessel passages	18,615	17,956	14,491	3,409	3,434	3,352
Tonnage, net registered	17,219,418	16,806,781	13,110,366	8,560,284	8,448,383	8,039,175
Days of navigation	232	231	234	365	365	365

*1895 and 1896 figures include traffic of Canadian canal at Sault Ste. Marie.

A correspondent in Washington, writing for one of the Detroit newspapers, has met James A. Dumont. Nobody was ever more obliging to the newspapers than the chief of the steamboat inspection service, and if it was simply a matter of courteous treatment to everybody in office, they would all be fighting to help him keep his job. He captured the Detroit man, for this is what he wrote home: "Those fortunate to have the acquaintance of Mr. Dumont cannot but be impressed with his general knowledge, his quickness at grasping a subject, and his ability to meet with effective argument anybody who encounters him. But it must be remembered that he has held this important position about twenty-five years, that he has had to fight hundreds of enemies many of them intent on ousting him, and that he has during all that time come in constant contact with the brightest minds in the country. He is a thorough steamboat man, a lawyer, in fact, if not in practice, and a diplomat, and it is no wonder that through all administrations he has been able to hold his position while everybody else has been thrown out."

Not long ago it was found that the fleet of steel vessels on the lakes had grown to such an extent that the number of vessels of the first class —1,000 tons and above that figure—owned on the lakes was greater than the number of vessels of the same class owned in all other parts of the country. Now the United States commissioner of navigation, who has just figured up reports from collectors of customs throughout the country, announces that during the year ending June 30, 1897, there was more tonnage built on the lakes than in all other parts of the country. The figures are 120 vessels of 126,937 gross tons for the lakes, against 771 vessels of only 115,296 tons for all other parts of the country. During the past decade the steam tonnage of the country has increased 816,000 tons, of which increase 500,000 tons belong to the lakes.

It is not probable that the merchant marine of this country will be rehabilitated by the scheme of discriminating duties. The idea is a very pretty one no doubt, and may recommend itself to certain congressmen as a means of making political capital for themselves, or as a help in furthering the interests of the western railroads in overcoming competition with those of Caada. The ability to grasp the subject of how effectively to build up our merchant marine, does not seem to be possessed by the average congressman. We do not, however, despair because of this. Some day, in the near future, it is to be hoped, the shipping question will be given the intelligent consideration by congress that is due to it. In the meantime let nostrums of the discriminating duty kind be avoided. —Maritime Register.

Great Britain's naval programme for the present year provides for an expenditure of $27,500,000. The ships to be built include four battleships, four armored cruisers and six light-draught river boats. The four cruisers and one battleship are to be built by contract. The gunboats for river service are an entirely new type, being 180 feet long and 33 feet beam. They are to have a speed of 12½ knots with 1,300 indicated horse power, and are to be fitted with water tube boilers of the small tube type, working at a pressure of 250 pounds per square inch. They will have a draught of 8 feet, with 700 tons displacement.

Until recently only a few lake vessels carried oil to be used for quieting waves in time of storm. Now the number carrying oil bags is quite large, especially on Lake Michigan, where a list made up a few days ago included the steamers Madagascar and tow, the boats of the Biglow line, the Fanny Neil, S. M. Stevenson, Arizona, Plymouth and Scotia. The tugs of the Dunham towage company all carry oil bags. With tows of one or more vessels the use of oil from the steamer has been found to be very beneficial in protecting the boats in tow from receiving the destructive seas on their decks.

Before taking further action in the matter of fireproof wood, the navy department is awaiting the receipt of a report from Mare island, where a structure made of the wood and representing a deck is undergoing a severe test. This report is expected early in October. It will be recalled that early in August the department took steps to restrict the use of the wood and it is said by the officials that its employment hereafter will be confined to the interior work on board vessels.

Captain James Parsons of the steamer Chas. Hebard, writes Geo. L. McCurdy, of Chicago, as follows: "In looking over the disasters in the locality of Point Aux Barques, Lake Huron, I think you will note that the majority of them are occasioned through thick weather, and a fog whistle at that point, it seems to me, is more necessary than at either Point Austin or Sand Beach. I sincerely trust the government authorities will look into this matter, as it is very important.

After many trials on the Seine and in the open sea off Havre the roller steamer Ernest Bazin has realized a speed of only 8 knots. The experiments have been conducted by several engineers in the service of the French government. Notwithstanding their inability to get speed out of the experimental vessel, these experts conclude that M. Bazin is right in principle, and that the use of the roller displacement economizes 70 per cent. of the power.

Rt. Hon. W. J. Pirrie, mayor of Glasgow, and managing partner of the firm of Harland & Wolff, Belfast ship builders, has been interviewed by a New York reporter, and is quoted as saying that a mate for the big Oceanic, building at Belfast, will very probably be ordered soon by the White Star management. He also says that he looks for an 800-foot steamer one of these days.

Let all the steamboat men who want to serve Uncle Sam as inspectors post up on rules of the road and engineering problems before February next. It is announced that during that month examinations of candidates for positions on local boards of the steamboat inspectio n service will be held in all parts of the lakes, under the direction of the civil service commission.

The Kaiser Frederick, another big passenger ship for the North German Lloyd Co., which is expected to be about as fast as the Kaiser Wilhelm der Grosse, was launched at Danztic, a few days ago, but will not be ready for service until next spring.

Folger will probably be the name given to the revenue cutter which the treasury department is about to build for the New York station.

Fast Ships Approach Each Other Rapidly.

In a recent number of Cassier's Magazine, Lieut. James H. Scott of the United States revenue marine service refers to the danger of collision at sea between fast steamers—those of the 20-knot kind. In one paragraph he directs attention to the rapidity with which such vessels approach each other after the lights of one have been sighted on the other. He says:

"Two steam vessels, each having a speed of 21 knots an hour, approach each other, at night, end on, proceeding in opposite directions. These vessels complying fully with the law, have the masthead lights visible at a distance of five miles and the side lights visible at a distance of two miles. The night is dark, the atmosphere clear, and the men on lookout pick up the lights the instant they become visible. When the vessels are, say five miles apart, the lookouts will report the masthead light of the approaching vessel to the officer on the bridge, who is able to see it immediately. He will, however, be unable to tell the other vessel's direction until her side lights are visible. These he will see when the vessels are about two miles apart, and are approaching the point of collision at the rate of 42 miles an hour. There are available two minutes and twenty-eight seconds for the ships' officers to see the lights, to make up their minds how they can best avert a collision, to give the order to port the helm, for the man at the wheel to obey the order, for the vessel to obey her helm, and for the ships to go clear. Does anyone say that the time is sufficient for all these agents to perform their several functions in ample time to avert a collision?"

Portage Lake Canals.

In the building of new breakwater piers at the upper entrance to the Portage Lake canals and the extension of piers at the Keweenaw entrance, the government will make approaches to these waterways safe in all kinds of weather. This is one of the main features of the project which Major Clinton B. Sears, government engineer, has in hand. The project also provides, ultimately, for 20 feet navigation all the way through the canals, with a bottom width of about 125 feet, and to ease off the sharp bends. "We have practically, now, through the waterway," Major Sears says, "16 feet navigation, but the channel is narrow in places, and the bends are somewhat sharper than we intend to have them, ultimately. It is well buoyed and fairly well lighted, but over the buoyage and lighting, of course, the engineer office has no jurisdiction."

A Possible Soft Coal Combination.

Important results have followed the strike of bituminous coal miners in Ohio and Pennsylvania. Improvement in all manufacturing lines, especially the iron trade, has created an enormous demand for coal with depleted stocks everywhere. The shortage of coal in the northwestern districts, supplied largely by the lakes, will be very heavy, no matter how large the movement by lake many continue until the close of navigation. The mines of Ohio and Pennsylvania will undoubtedly be operated constantly and profitably throughout the winter. This encouraging condition of affairs is again causing talk of a combination of the mining and railway interests involved in the trade. Bradstreets, which keeps very well posted on affairs of the Ohio and Pennsylvania coal railways, says in its last issue:

"For the fourth week in September the Cleveland, Lorain & Wheeling road displays gross earnings of $49,542, an increase of $15,564, or 46 per cent. Those of the Toledo & Ohio Central for the same week are $48,859, a gain of $6,226, or 14½ per cent., and the Wheeling & Lake Erie for that week, with a total gross of $50,902 (the largest for a week in its history), shows a gain over the same week last year of no less than $17,205, or 51 per cent. It should be remembered that the brunt of the strike's effects fell on the the Ohio coal roads. Taking the gross earnings of the three roads just referred to, together with that of the Columbus, Hocking Valley & Toledo, from January 1 to July 31, it will be found that the four companies in eight months lost, as compared with the same period of 1896, about 16 per cent, of their total revenues. Moreover, it must be recalled that the strike itself was but the culmination of a long state of constantly increasing demoralization in the soft-coal trade and unprofitable conditions affecting both producers and carriers, so that three of the latter, two of which when normal conditions prevailed had ranked among the dividend-payers, were forced into the hands of receivers, and the two latter are now undergoing more or less radical reorganizations. It is true that the improvement that has followed the ending of the strike has greatly facilitated the reorganizations of both the Hocking Valley and the Wheeling & Lake Erie properties, the committees representing the stock and security holders making announcements this week which presage the speedy formulation and carrying out of a plan for its financial reestablishment. Beyond this, however, there are questions in connection with bituminous coal production and transportation in the Pittsburgh, West Virginia and middle-western regions which seem to invite a solution such as has been adopted in the case of the anthracite trade at the east. It has been said that the concentration of control in the latter case has not resulted in an increase of revenue, but it has certainly stopped demoralizing competition.

The anthracite coal railroads, as was natural, have not made money during the period of intense industrial depression, but they have not lost as much as would have been the case under the old conditions.

"The bituminous trade, while apparently more complex than the anthracite industry, in reality is in a position where measures similar to those adopted in the anthracite trade are virtually invited. The reduction of a great industry to an unprofitable basis benefits no one, and, as the recent miners' strike has demonstrated, the laborers engaged in it least of all. The controlling elements in western soft-coal transportation are comparatively few, and the fact that the same interest which has successfully taken the lead in changing chaos to order in the anthracite situation have a direct interest in the bituminous trade is the cause of some surmise and rumor, particularly among those who have followed the course of these matters with attention. The coming reorganization of the Hocking Valley property under the auspices of the interest in question is considered as a central factor in the matter. It is also intimated that allied influences are active as regards the control of the Toledo & Ohio Central and the Cleveland, Lorain & Wheeling properties, or the Columbus, Sandusky & Hocking Valley, the unnecessary and chonically bankrupt road of the group. The Wheeling & Lake Erie's position, while undergoing a reorganization, would not be a bar to its untimately being brought into such a combination. As to the other bituminous railroad lines and interests allied with them, which have to be considered in the same connection, it is safe to conclude that the Pennsylvania would be favorable to a close alliance with a combination that would regulate and benefit the bituminous trade, and the attitude of the Big Four also need not be doubted. The only remaining line to be considered is the Baltimore & Ohio. The difficulties in the way of reorganizing that corporation are manifold. It is, however, to be noted that the importance of that system as a soft-coal carrier is only exceeded by that arising out of its relations to the trunk-line family. The part which New York interests are believed to be taking in the preliminaries of the Baltimore & Ohio Co's. reorganization is not as yet clear, but the presumption that outside aid must be invoked, and that it can come only from the interests that are supposed to be planning a bituminous combination, has much to recommend it."

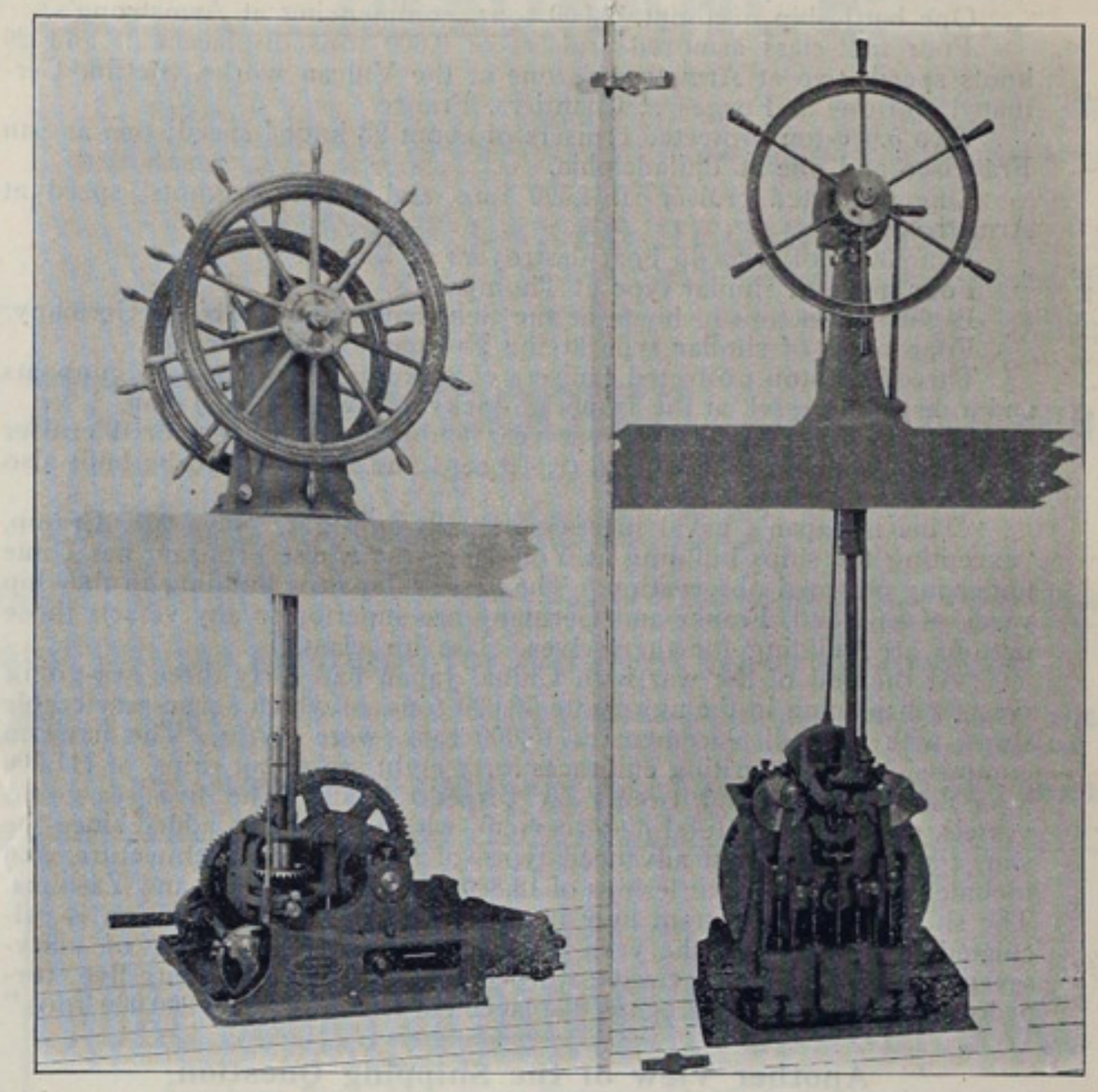
Among the several lubricating oils on the market for marine engines, a new brand, called the Lake Carriers, promises to create quite a demand. The engineer of the Pascal P. Pratt writes that his engines do better work on a third less of this oil than any other. He asked for enough to last until the end of the season. This oil is manufactured by the Lake Carriers' Oil Company, with offices at 720 Perry-Payne building, and warehouses at 235 Merwin street, Cleveland. It is for sale at the following agencies: Barry Bros., Duluth and Chicago; A. C. Nagel, Toledo; C. H. McCutcheon, Buffalo and W. S. McKinnon, Ashtabula. Lard oil, tallow and cup greases are also carried in stock.

The Montreal Transportation Co. has been granted a bonus of $35,000 for the building of a grain elevator at Kingston, Ont., and will begin at once the construction of a house of 750,000 bushels capacity, on property adjacent to its present possessions.

Hunters' Rates—Via the Nickel Plate road to designated points in the northwest, and southwest; also to local points in western Ohio and northern Indiana. No. 353, Nov. 15.

Beck Steam Steering Gear.

Two illustrations appearing herewith show patterns of steam steering gears Nos. 5 and 8, manufactured by Pawling & Harnischfeger, Milwaukee, Wis. The one with a double steering wheel is No. 8 and it is designed for vessels of 4,000 tons capacity and upward. The pull on the quadrant need not exceed 15 to 20 tons, and the change from steam to hand



can be made in an instant. The cylinders, frames and bed plate are cut in one piece, and the small parts, while protected from injury or dirt, are easily accessible. The controller for operating the steam valve is simple and novel, running in a closed case, partly filled with oil, insuring lubrication and freedom from wear and tear.

Gear No. 5 can be placed in pilot house or below deck, and is designed for tugs and smaller steam vessels. It embodies nearly all the features of the larger gear.

Stock of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes, Oct. 9 1897:

	Wheat, bushels.	Corn, bushels.
Chicago	3,361,000	18,958,000
Duluth	2,574,000	423,000
Milwaukee	107,000	391,000
Detroit	341,000	10,000
Toledo	431,000	508,000
Buffalo	1,002,000	836,000
	7,816,000	21,126,000

As compared with a week ago, the above figures show, at the several points named, an increase of 97,000 bushels of wheat and a decrease of 216,000 bushels of corn. On the same date there was afloat on the lakes 3,293,000 bushels of wheat, 1,774,000 bushels of corn and 1,637,000 bushels of oats. Grain afloat on the canals aggregated 349,000 bushels of wheat, 989,000 bushels of corn and 166,000 bushels of oats.

Officials of the General Electric Co. have made a proposition to the navy department to fit the battleships Illinois and Alabama with an electric system for operating their 13-inch turrets for only $10,000 each over the price which the department had fixed for equipping the vessels with hydraulic power. A proposition has also been received from the Union Iron Works to change the hydraulic to electric power in the battleship Wisconsin for $172,000. This figure is considered excessive by the department. It will be recalled that as a result of the change from the hydraulic to the electric system in the operation of the turrets of the Kearsarge and Kentucky, the department deducted $30,000 from the contracts for those ships, on the ground that the fitting of the electrical system was not as expensive as the installation of hydraulics. Similar action is expected in the case of the Illinois and Alabama. The United States has gone farther than European countries in adopting electricity for operating turrets. No other nation has introduced it in connection with 13-inch turrets.—Army and Navy Journal.

The Marine Review has prepared in neat oak frames cards containing the schedule of time required to be run between certain points in the St. Mary's river under the speed limit of seven miles an hour. When hung in a pilot house, distance and time may be readily noted from these cards, as the type is large. They will be sent by express to any address at $1 each, or may be had upon application at 409 Perry-Payne building, Cleveland, for 65 cents each.

Japan, The Coming Sea Power.

Charles H. Cramp, who recently returned from an extended European trip, sums up in the North American Review for October, the naval vessels now building for Japan. The list follows:

Three 14,800-ton battleships, which are well advanced, at Armstrong's works, Newcastle, at Thompsons on the Clyde, and at the Thames Iron Works, respectively.

One battleship of about 10,000 tons, commencing at Armstrong's.

Four first-class armored cruisers of 9,600 tons displacement and 20 knots speed; two at Armstrong's one at the Vulcan works, Stettin, Germany, and one at Forges et Chantiers, France.

Two 5,000-ton protected cruisers of about 23 knots' speed; one at San Francisco and one at Philadelphia.

One protected cruiser of 4,300 tons and about 23 knots' speed at Armstrong's.

Four 30-knot torpedo boat destroyers at Yarrow's.

Four more of similar type at Thompson's.

Eight 90-ton topedo boats at the Schichau works, Elbing, Germany.

Four more of similar type at the Normand works, France.

Three 3,000-ton protected cruisers of 20 knots, three torpedo gunboats and a dispatch vessel, at the Imperial dockyard, Yokosuka, Japan.

The program for the current year embraces a fifth armored cruiser of the type previously described (9,600 tons and 20 knots) to be built also at Yokosuka.

"This is Japan's naval increase actually in sight," says Mr. Cramp, "excepting the ships building at Yohosuka, the whole program has come under my personal observation. The vessels Japan is building in the ship yards of England, France and Germany are superior to any vessels those nations are building for themselves, class for class.

"At the end of the war with China, Japan had forty-three sea-going vessels, displacing in the aggregate 79,000 tons, of which seven serviceable ships, with total displacement of 15,000 tons, were prizes. The navy in commission at this writing embraces forty-eight sea-going ships, of 111,000 tons displacement, and twenty-six torpedo boats. The five sea-going vessels, of 32,000 tons total displacement, which have been added since the war, represent the most advanced types of model naval architecture, and include two first-class battleships of 12,800 tons each, the Fuji and Yashima. The ship-building program now in process of actual construction is calculated to produce by the year 1903 a total effective force of sixty-seven sea-going ships, twelve torpedo-catchers and seventy-five torpedo boats, with an aggregate displacement of more than 200,000 tons."

Another View of the Shipping Question.

We have always advocated the promotion of the merchant carrying trade in American bottoms to the utmost, but we have never regarded precedence in ocean freightage so absolutely necessary to the development of this vast country as some others. The treasury reports of exports and imports carried in American ships show that of the imports we carry barely 15 per cent, while of the exports our percentage is but half as much. This is, of course, an unpleasant showing. It galls our pride and wounds our national sensibilities. But it is certain that we have had our pride galled and our sensibilities wounded for many years, and without much stimulation of American ambition to embark capital in the ocean carrying trade. We are not a maritime country, though we have an enormous coast line. The fact is that we are more interested in the development of our vast area than in anything else, and our men of capital find ample field for the use of their money in domestic commerce. It is not necessary that we become supreme on the seas in order to lead the nations in the matter of material growth, but it is worth while to share much more largely in the ocean carrying trade, because we are importing and exporting a greater volume than any nation on the globe. Some have supposed that our marine decadence is due to a lack of ships which is partly true, but quite inadequate as an explanation. Does any man suppose that if there was as much money in ocean freighting as there is in railway, coastwise and lake commerce, we should lack ships to carry at least 50 per cent. of our exports and imports? But for us there is no profit, and therefore small inducement offered in ocean freighting.

Capital always seeks profitable investments, and American capital finds more profitable employment than the ocean carrying trade. Everybody in the business world knows this. We can build as good ships as anybody, and we have capital enough to build them. We can build ships about as cheaply as anybody. Yet we do not build fleets to compete for the ocean carrying trade. We do not do it because freights are very low, and the cost of sailing a ship under American register is from 30 to 40 per cent. greater than the cost of other nations. We pay much greater wages, we demand a better quality and variety of ship stores, and in some of our ports we exact greater harbor dues. John Roach showed that were our ships given to us we could not compete with British, German, Italian or Norwegian ships, all of which cost much less to sail than our own. If there had been any profit under our system in ocean freights, we should have plenty of ships. But coastwise and lake freights yield larger margins of profit, and thus we have a coastwise and lake merchant marine of enormous and growing tonnage. Let no man for a moment suppose that the United States can be supreme on the land and at the same time be supreme on the seas. England is a purely maritime power, and after centuries of determined effort it has the supremacy of the seas. We have single states of greater area than England and richer in resources. We shall go on developing these enormous resources at great cost, because our greatness as a nation is only possible with such development. We could not afford to accept the supremacy of the seas if it involved a halt in our internal development. Our coastwise and lake trade and our railway transportation are many times more potential for internal development than the entire carrying trade of the world over seas would be, even if we could monopolize it. Let everybody bear in mind that when the ocean trade offers as great inducements as our home trade, we shall have ships in abundance.—North American, Philadelphia.

Higher Wages.

At a meeting of the executive committee of the Lake Carriers' Association, held in Cleveland Wednesday, it was decided to advance wages of some employees aboard lake vessels. The advance is in most cases $7.50 a month and takes effect Oct 15. Following are parts of the schedule corrected in accordance with changes made by the committee:

CHANGES IN WAGES ON STEAMERS.

	FIRST AND SECOND CLASS. PER MONTH.	THIRD CLASS. PER MONTH.
Firemen	$37.50	$32.50 to $37.50
Wheelmen	37.50	32.50 to 37.50
Lookouts	37.50	32.50 to 37.50
Deck hands	20.00	20.00
Oilers	37.50*	.....

CHANGES IN WAGES ON CONSORTS AND SAILING VESSELS.

	FIRST CLASS. PER MONTH.	SECOND CLASS. PER MONTH.
Cooks	$37.50	$32.50
Seamen	37.50	$27.50 to 32.50

*Oilers not generally carried on second-class steamers.

Important Notice Pertaining to Sault River.

Col. G. J. Lydecker, United States engineer in charge of St. Mary's river improvements, gives out the following notice regarding changes in location of float light and buoys at the Middle Neebish:

"The middle float-light (No. 3) on the south side of the deep cut through the Middle Neebish, the black spar buoy next below the light, and the black spar buoy next above the light have been moved northward, to a line about 90 feet north of, and parallel to, the south or Neebish island side of the cut. In this position they mark the outer edge of a rocky coaming, or ridge, that results from the work of rock excavation now being carried on there for the purpose of deepening the channel. The upper and lower ends of this coaming will be marked by anchored scows (in line with the float-light and buoys) on which conspicuous white lights will be shown at night. The clear width of channel left to the northward of these buoys and lights is about 210 feet, but no vessel should attempt a passage to the southward of them.

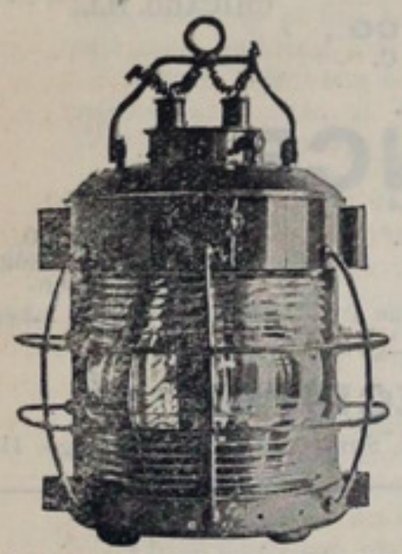
"Reasonable regard for safe navigation through this narrowed section of the channel, with its rocky sides and rapid current, requires that vessels should not meet and pass each other there; and in order to prevent it, up-bound vessels should stop and remain in the wide channel-way below while any down-bound craft is approaching or passing the narrow section."

A dispatch from Halifax intimates that Harland & Wolff, famous ship builders of Belfast, may become interested in the proposed fast Atlantic steamship service for Canada. Peterson, Tate & Co. of Newcastle have finally deposited in London the $50,000 necessary to bind their contract with the Dominion government. In connection with this action on the part of the contractors: the Halifax dispatch says: "It is regarded here as significant that within the past ten days a representative of the immensely wealthy Belfast ship building firm of Harland & Wolff visited Halifax and made a careful inspection of the railway and docking facilities of the port. Some of the Halifax steamship men, notably W. A. Black of Pickford & Black, incline to the belief that Harland & Wolff are interested in the project of Peterson, Tate & Co. The Belfast firm is heavily interested financially in several of the most important steamship lines operating between New York and Europe, as well as between Canada and England, holding stock which was secured in part payment for steamers constructed by them."

Mr. H. F. J. Porter, general sales agent of the Bethlehem Iron Co., with headquarters at 1433 Marquette building, Chicago, has for the past six months been located at the works in South Bethlehem, during the absence in Europe of Mr. R. W. Davenport, second vice president. Mr. Porter is spending a few days at his office in Chicago and reports that there is a decided improvement in the steel forging business in the east, and that there are evidences that business will pick up rapidly in the west. He will return to the works and have his headquarters there during the winter. His western office will be in charge of his assistant, Mr. Erwin Nelson, who will be pleased to answer all correspondence and give information on matters relating to steel forgings of all descriptions.

The two new steamers building at the shipyard of James Davidson, West Bay City, Mich., will be fitted with Howden hot draft appliances. The contract was placed with the Dry Dock Engine Works by S. F. Hodge & Co., of Detroit, as they are to furnish the engines for the steamers. Howden draft has been adopted by James Davidson in seven steamers already built; these two will make nine. This is certainly an endorsement of the actual economical results of the apparatus. Last week the Review anounced the thiryt-sixth equipment of this draft for the steamer Bulgaria. This contract brings the number of equipments up to thirty-eight.

MARINE LAMPS



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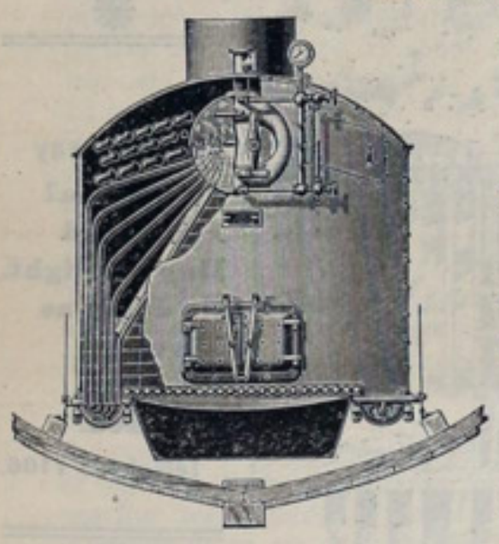

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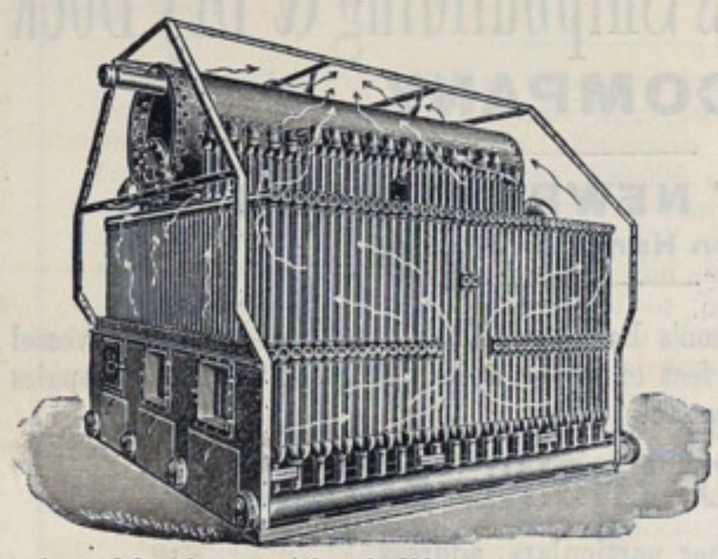

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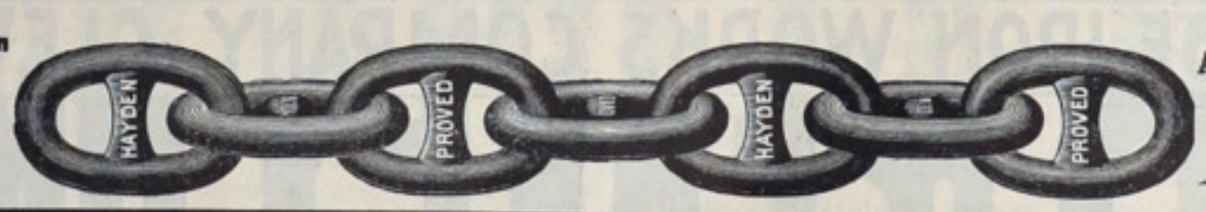

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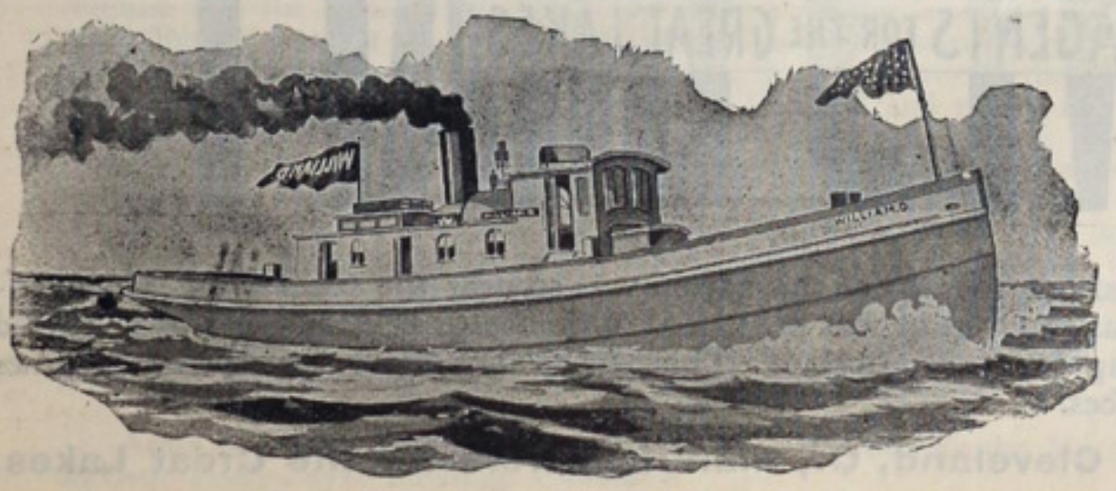

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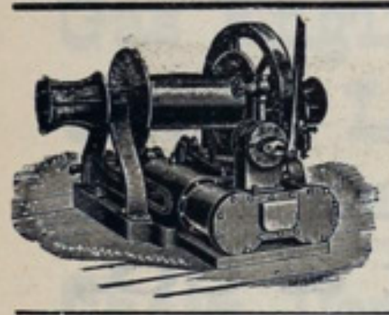

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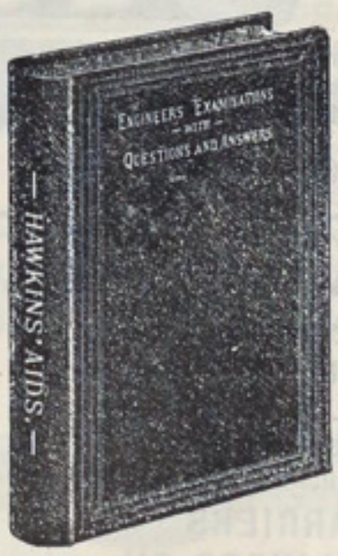

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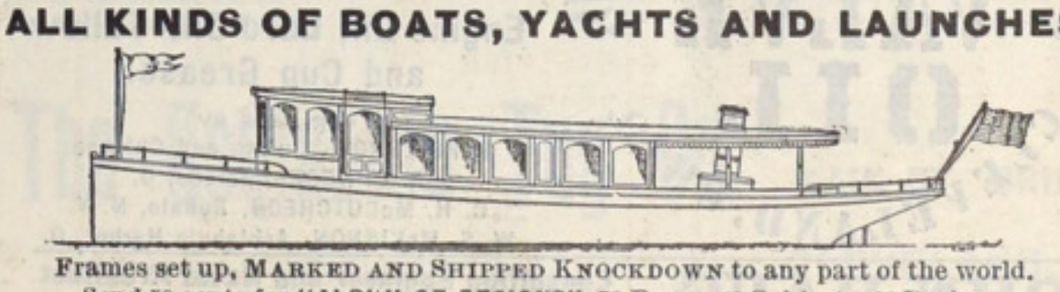

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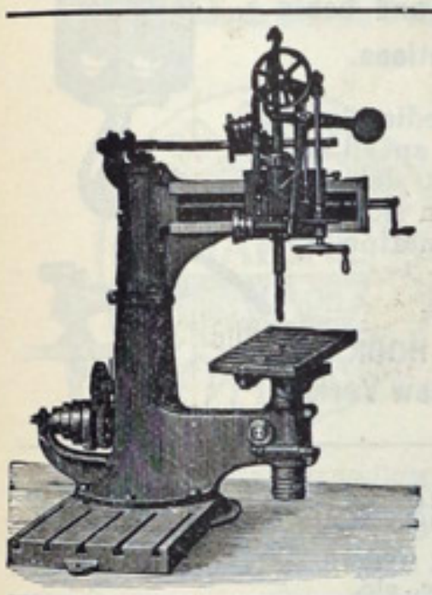

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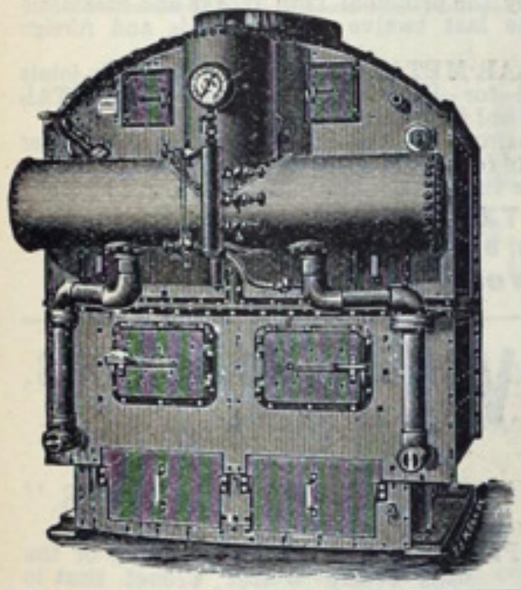

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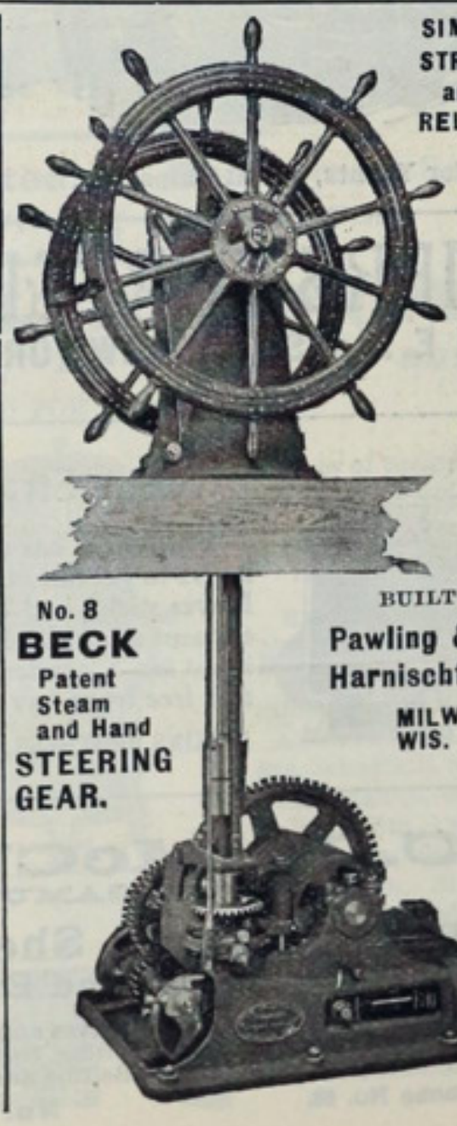

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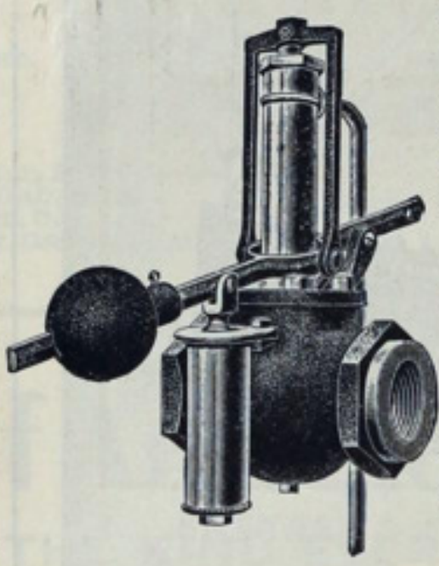

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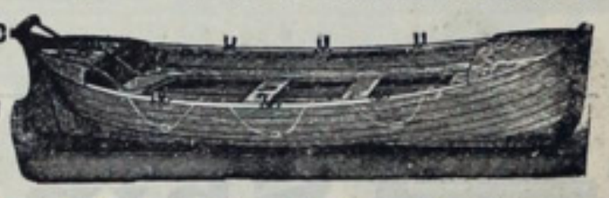

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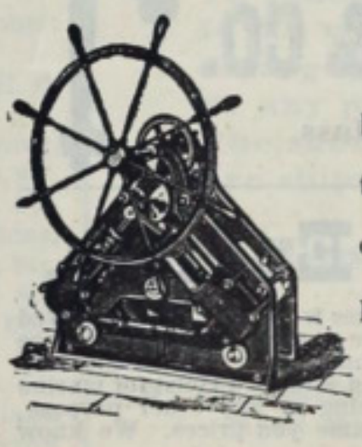

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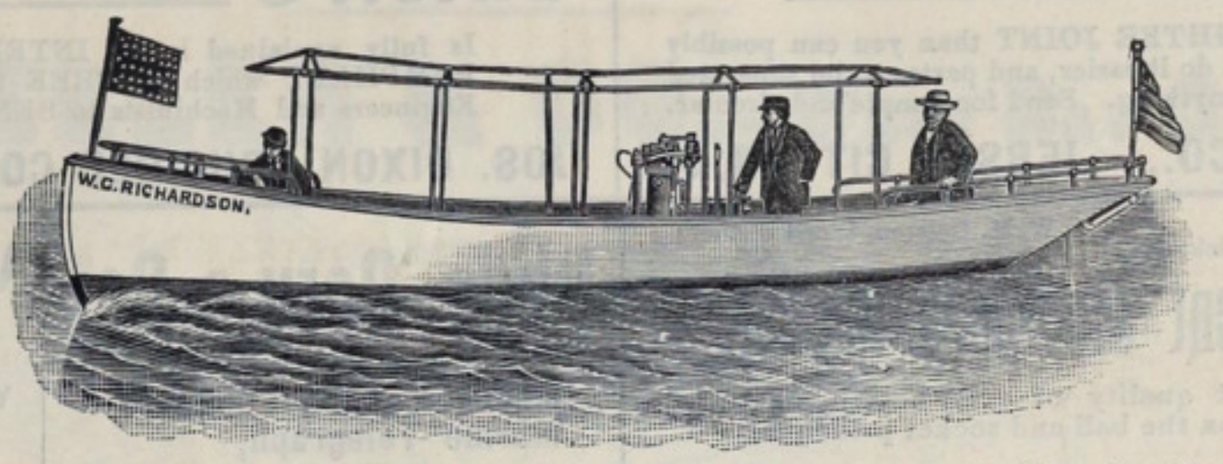

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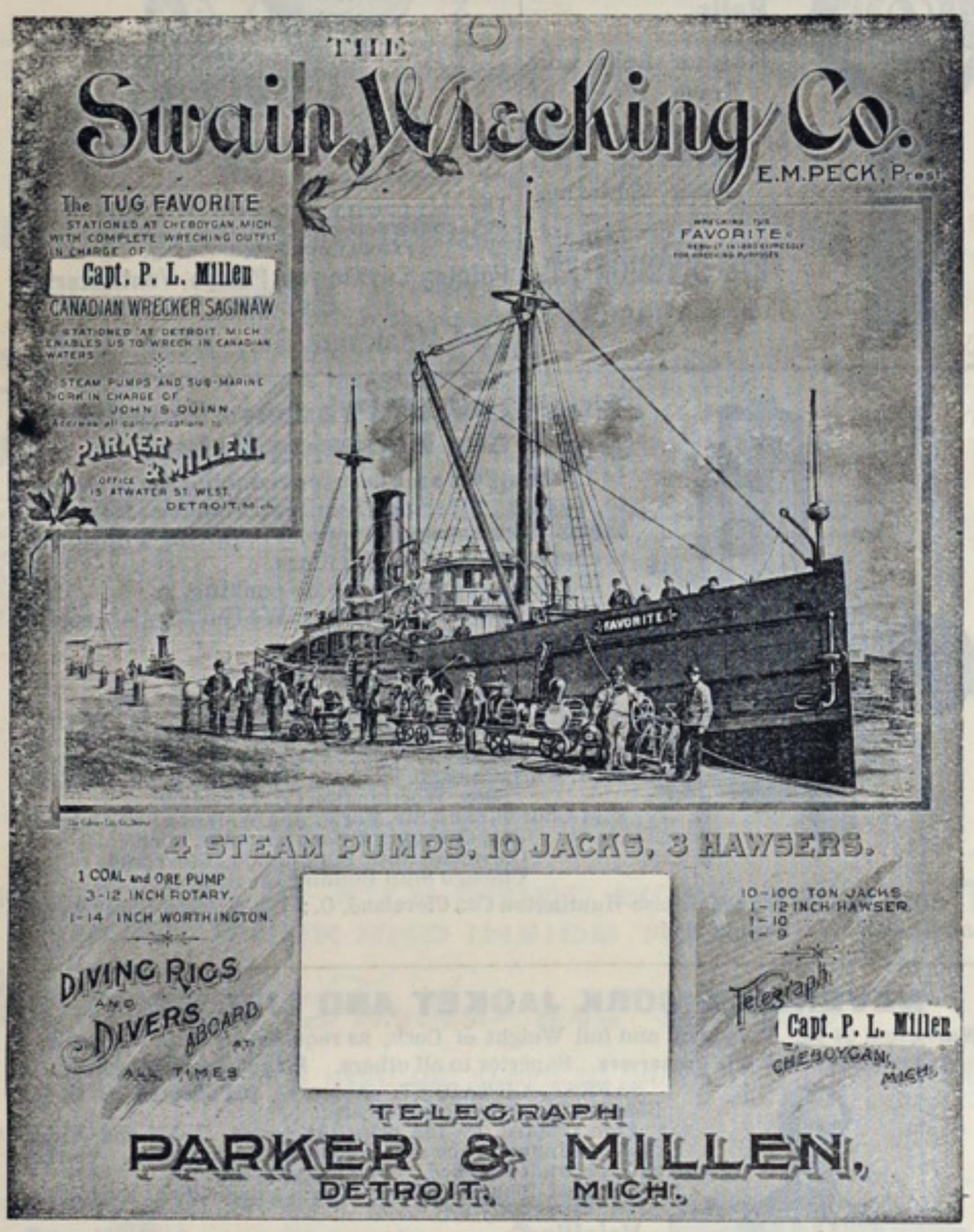

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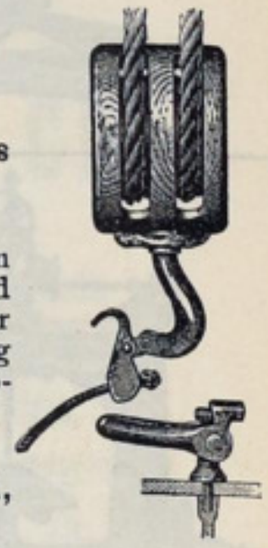

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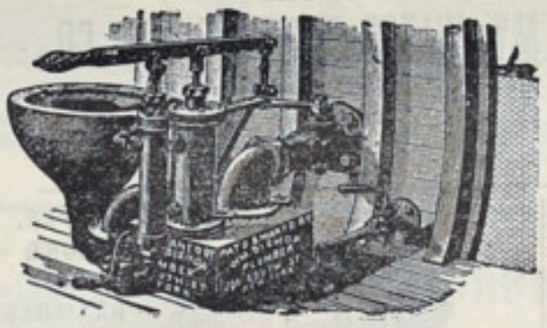

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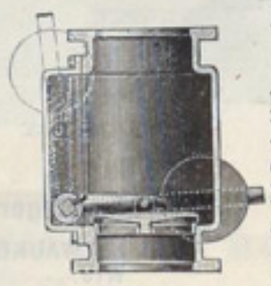

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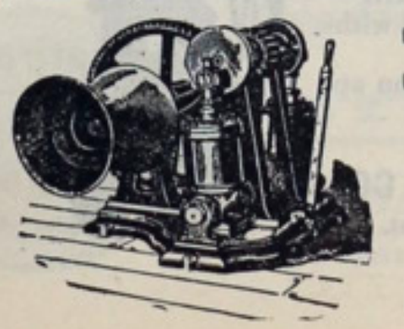

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